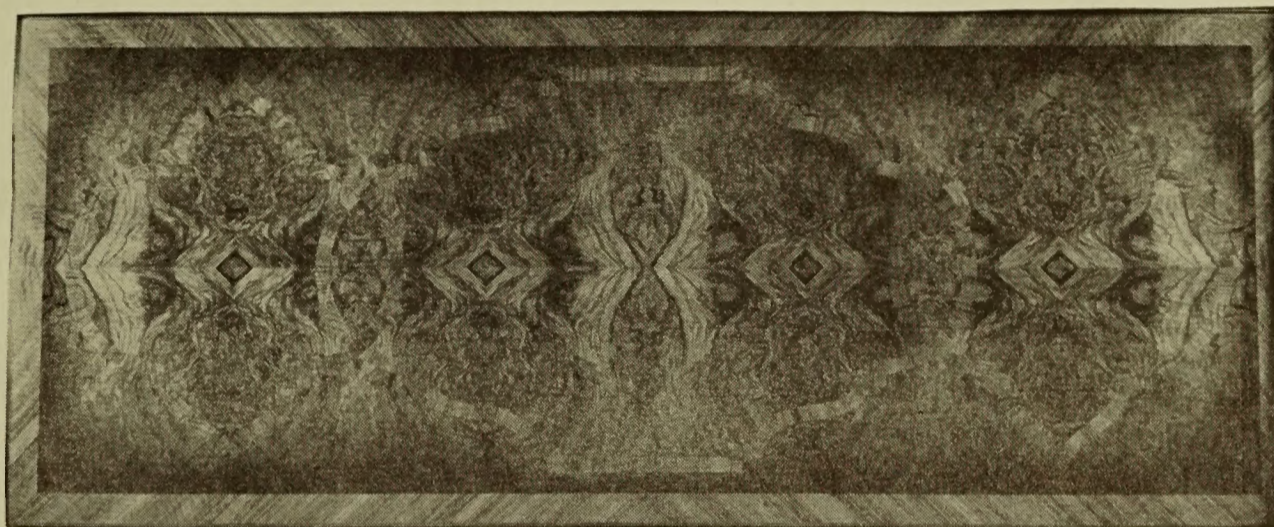


# veneer and Plywood

(PANELS)



The beautiful table-top illustrated above serves as the artistic keynote for a magnificent Directors' Room. The entire top is made up of burl and highly figured veneers of American Walnut, with a graceful inlay ribbon and a border of striped wood.

## Specifications and Descriptive Data

HEREIN is published, for the first time, the fully illustrated information essential to clear description and accurate specification of panel faces for the various types and great variety of face veneers.

This information is designed to enable the architect, the designer, the woodworker, the panel manufacturer and the furniture manufacturer to secure the precise effects desired, and to avoid misunderstandings and costly mistakes.

In order to give the publication maximum value, all of the principal native cabinet woods, as well as many foreign varieties, have been included. An index will be found on page eight.

In assuming the work and expense involved in collecting, editing and printing this material, the undersigned have been moved by three considerations. For one thing, the job obviously needed to be done; and for another, we are interested in a variety of woods. Of first importance, however, was the desire to assist creative artists and fabricators in taking full advantage of the practically limitless possibilities for effective design presented by Walnut—"the cabinet wood of the ages."

Burdett Green, Secretary

American Walnut Manufacturers' Association  
616 South Michigan Avenue  
CHICAGO, ILLINOIS

## Veneer and Plywood (Panels)

Veneers are *thin sheets of wood*. They are used (except for container purposes) almost exclusively in the manufacture of plywood, which is of two general types:

- (a) Panels for interiors and furniture (aesthetic and structural).
- (b) Plywood for structural uses only (e.g., Douglas Fir and hardwood plywood).

The specification of veneers involves largely the first mentioned class, "(a) Interior wall panels and furniture panels."

Veneers are produced in several different ways, as are set forth herein. They fall into two general classes:

- (a) Face veneers.
- (b) Commercial veneers (cross-banding, backing and core stock).

The details of thickness, size, species, and type of commercial veneers are of little concern to the architect or designer, provided the panels are made by a reliable concern.

Complete knowledge of face veneers, including the types available in various species of wood, the effects obtainable, matching possibilities, and available sizes, must be in the possession of the designer, the architect, and the cabinetry fabricator, if full value and expression of the many beautiful effects possible are to be obtained.

Lack of this information usually results in impractical specifications, or in a design that proves faulty or gives an appearance that is either disappointing or not in keeping with the desired "feeling." Properly selected panels can easily be obtained by one acquainted with the basic facts set forth hereinafter.

The construction of a panel is shown simply by sketch (Fig. 1). It is composed of face, cross-banding, core and back, the grain of each layer being at right angles to the adjoining ones. Therefore, it is either three, five, seven, or more, plies in number.

The width, length, thickness and number of plies of a desired panel are governed by the article to be made or the wall area to be covered.

In the specification of veneer we are concerned largely with *face veneers*, to which the following specifications refer exclusively.

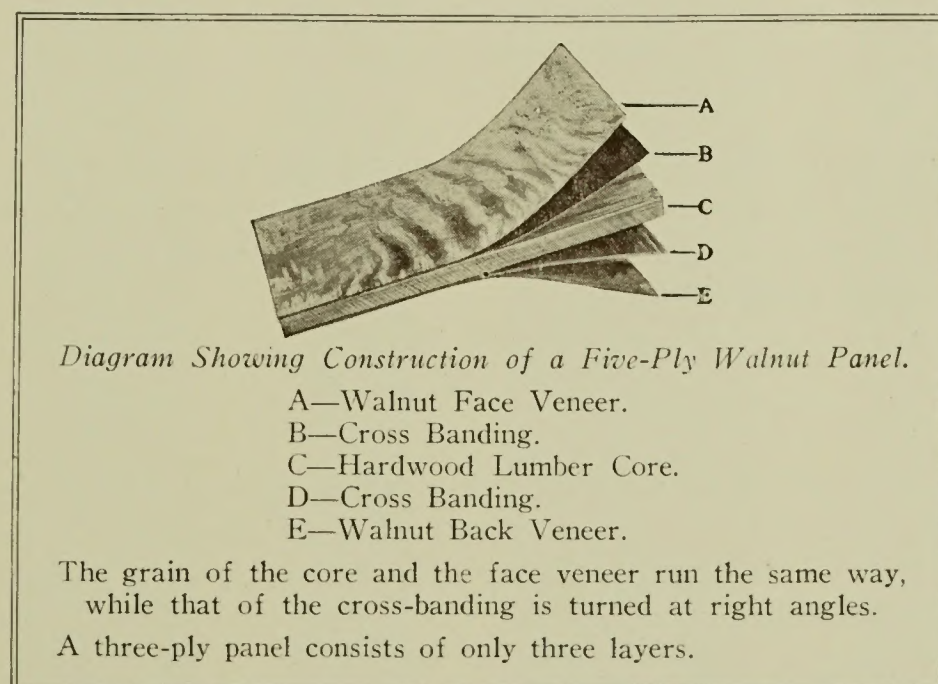


Fig. 1

CLAYTON  
RT  
8910  
Am35  
934

# Face Veneer Specifications

There are three bases for classifying veneers used as faces of panels:

- I. Method of manufacture
- II. Part of tree from which produced
- III. Matching

After one has chosen the species desired, *one classification of each group* must be named. (Example: American Walnut, 1/28" sliced, figured, longwood, two-piece book-matched.) (Fig. 2).

## I. Method of Manufacture:

### A. Sliced (Fig. 3).

Produced on a slicer by moving the prepared log (flitch) against a long knife, the log being cut through and through.

Sliced veneers offer excellent matching possibilities. It is the type of face veneer most extensively used, and goes to make up the majority of furniture and architectural woodwork panels produced in the United States. The sheets are kept in order as cut (same is true when cut on rotary or saw), thus making up a flitch. They are almost universally 1/28" in thickness\* in American-cut woods, and 1/40" or slightly thicker in foreign-cut fancywoods.

#### Available Sizes:

Sliced Walnut (Fig. 3):—  
    {Length 6' to 16'  
    {Width 6" to 24"

Quarters (Fig. 4 a and b) (sliced or half-round with heart or leaf character eliminated, that is, striped exclusively):—

    {Length 4' to 16'  
    {Width 5" to 12"

Half-round (Fig. 5) (about the same as sliced, shows slightly more heart character as it is produced on a lathe—off center):—

    {Length 6' to 10'  
    {Width 6" to 24"

### B. Rotary (Fig. 6).

Produced on a lathe by unrolling the veneer from the log, just as a roll of wrapping paper is unrolled (cut by revolving log against a long knife). To be used generally where one sheet covers an entire surface. Especially selected rotary has unusual matching possibilities.

Available Sizes:—  
    {Length 4' to 10'  
    {Width 10" to 30"

### C. Sawn (Fig. 4 b).

Produced on special veneer saws where the log moves against a band or circular saw. Generally used for producing veneer thicker\* than 1/24" or 1/18", especially 1/8" or 3/16" for door stiles, rails, and such uses. Somewhat limited matching possibilities.

Available Sizes:—  
    {Length 8' to 16'  
    {Width 6" to 12"

Special up to 21' long; 16" wide.

\*All thicknesses are "before sanding."

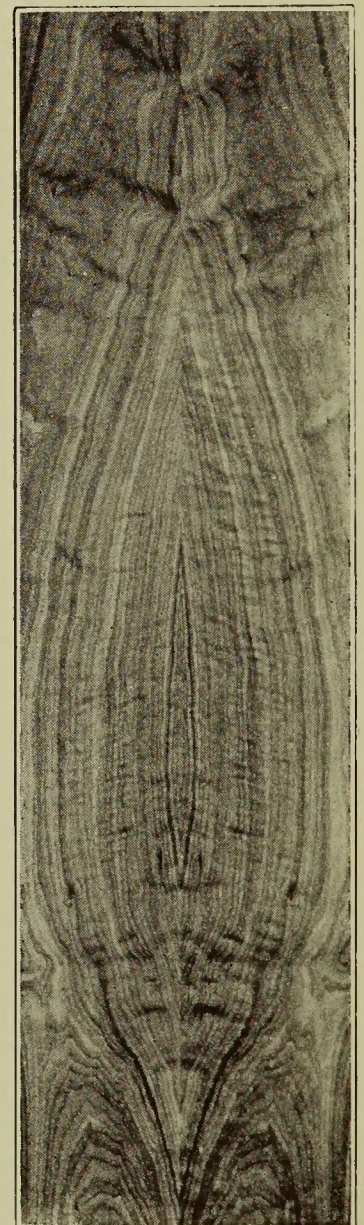


Fig. 2  
Two-piece figured  
Sliced Walnut

## II. Part of Tree From Which Produced—(Types of grain character and figure).

### A. *Longwood* or Trunkwood (Figs. 2—two-piece matched, 3, 4, 5, 6).

Sliced wood mostly, suitable for all general uses, e.g., furniture panels, interior panels, especially where long lengths are desired. Either plain, or, in certain woods or individual trees, highly figured, e.g., bee's-wing satinwood, fiddleback walnut, mottle walnut and mottle mahogany.

Available Sizes:— $\left\{ \begin{array}{l} \text{Length 6' to 18'} \\ \text{Width 6" to 24"} \end{array} \right.$   
Quarters:—Width 5" to 12"

### B. *Stumpwood* or Butts (Fig. 7).

Usually half-round, that is, cut on a lathe, both off-center and on-center. Most commonly available in American Walnut where an unusually attractive figure develops in the tree just above the ground line. Often mis-named "burl" walnut. Especially suited to four-piece matching.

Available Sizes:— $\left\{ \begin{array}{l} \text{Length 24" to 42"} \\ \text{Width 12" to 32"} \end{array} \right.$

### C. *Crotches* (Fig. 8 a and b).

Sliced or half-round; not available in large sizes. Formerly subject somewhat to checking, due to being extremely highly figured and having heavy amount of endwood. Modern methods of laying have overcome this and give excellent results. Available generally only in walnut, mahogany, faux satine and aspen.

Available Sizes:— $\left\{ \begin{array}{l} \text{Length 12" to 36"} \\ \text{Width 8" to 18"} \end{array} \right.$  Faux satine crotches available in lengths from 4' to 12', widths from 6" to 20".

### D. *Burls* (Fig. 9).

Usually produced half-round. Available in comparatively small sizes, very highly figured throughout, therefore more suitable as overlays, inlays, borders and other uses in combination with plainer types of veneer. The species in which burls are most generally available are redwood, Carpathian elm, walnut and thuya.

Available Sizes:—Irregular cuttings 6" x 6" up to 4 square feet.

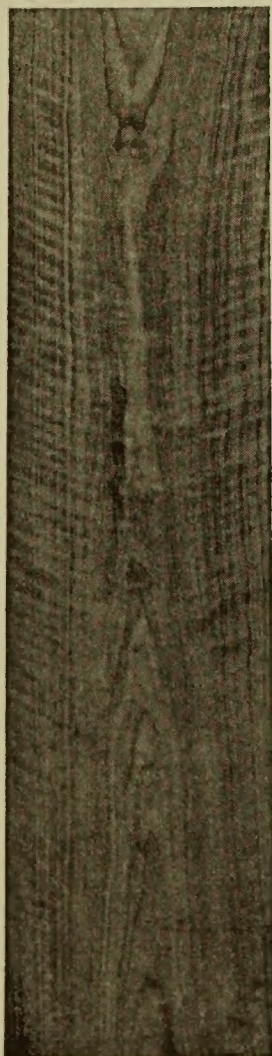


Fig. 3  
Sliced Walnut  
Longwood

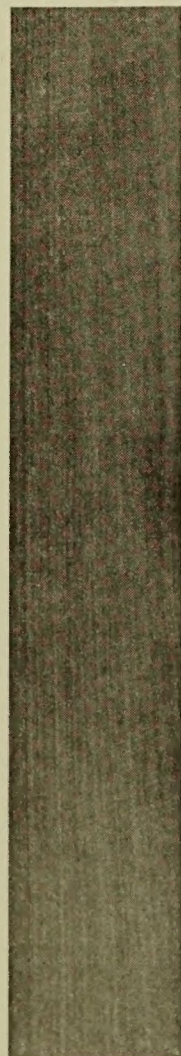


Fig. 4a  
Plain  
Quartered  
Walnut

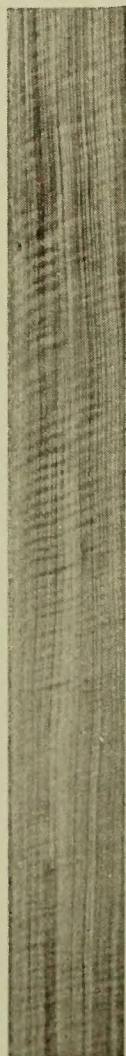


Fig. 4b  
Figured  
Quartered  
Walnut

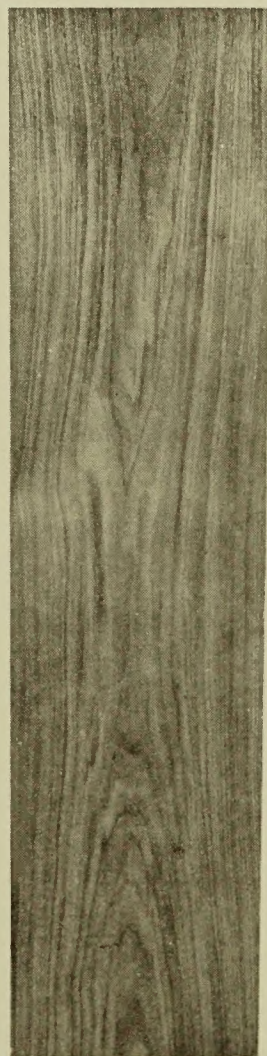


Fig. 5  
Half-round  
Walnut

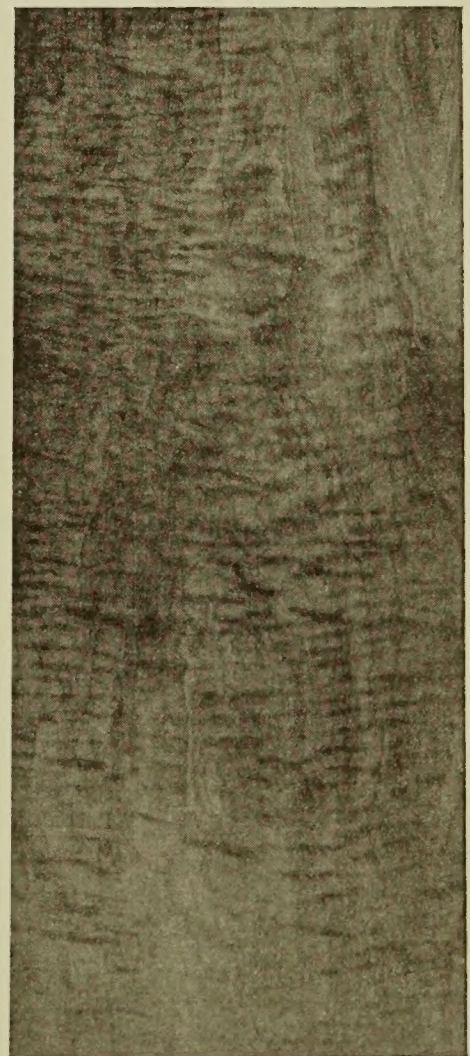


Fig. 6  
Rotary Walnut

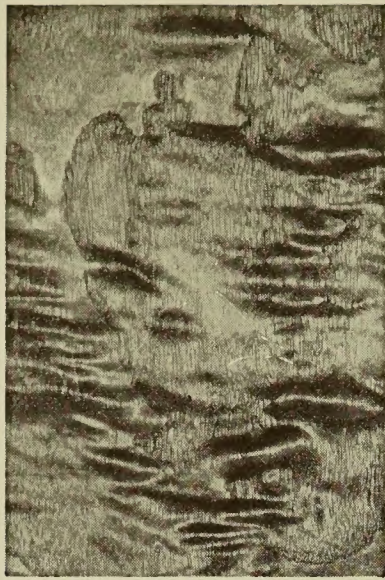


Fig. 7  
Walnut Stumpwood

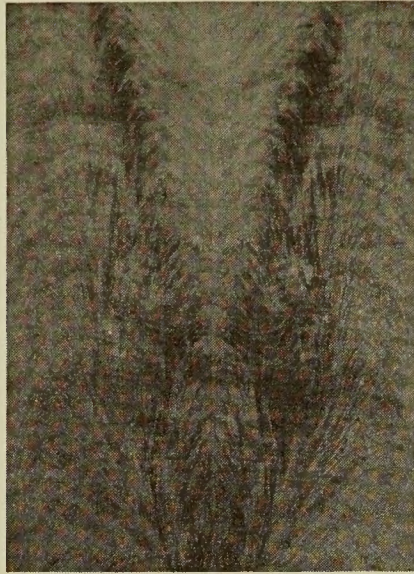


Fig. 8a  
Feather Crotch Walnut

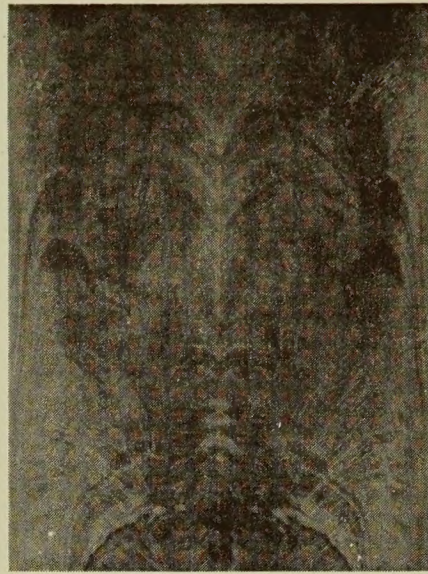


Fig. 8b  
Moon Crotch Walnut

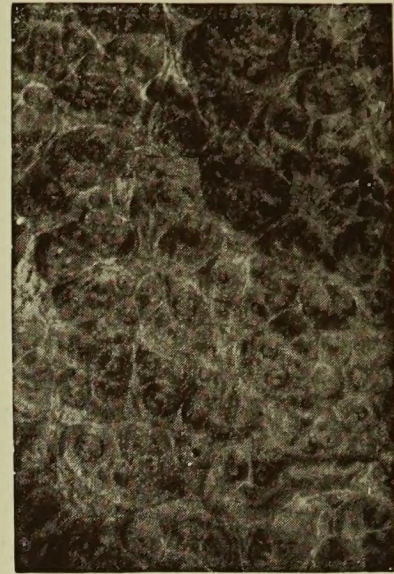


Fig. 9  
Burl Walnut

### III. Matching—(Where more than one piece is used to produce a panel face.)

- A. **Book Matched**—or reverse side matched—when viewed at an angle shows light and dark, thus offering additional possibilities in obtaining interesting effects, e.g., in Greek cross design flat panel can give raised center (depth) effect. (Figs. 2, 8).
- B. **End Matched**—(better known as butt matched). (Fig. 10).
- C. **Slide Matched**—or slip matched—avoids light and dark. This method is here illustrated with stumpwood to clearly show *how* it is done. The best effects of slide matched are obtained with sliced longwood. (Figs. 11 and 12).
- D. **Miscellaneous**—A great variety of possibilities, simple and elaborate—from 2 and 4 way matched butts, diamond, reverse diamond, V,  $\Lambda$ , herringbone, basket weave, etc., to the use of fancy combinations. See illustrations.
- E. **Where Matched.**

**Center Matched** (Figs. 2, 8, 10, 11)—Where two pieces of equal size are matched, with joint coming in center of panel.

**Random Matched**—Combination of unequal sized pieces.

**Balance Matched** (Fig. 12)—Where more than two pieces, although of uniform size, are laid as a face.

**Mismatched**—Where grain character or figure of the adjacent pieces in the face of a panel do not properly match.

This four piece book- and end-matched butt Walnut—Fig. 10—(60% figured—figure meaning cross waves or ripples) is made up of four consecutive, identical sheets of stumpwood. The numbers 1 to 6 indicate the order in which the sheets were cut. "F" means Face-side; and "B" means Back-side of the piece of veneer.

Sheets 1 and 2 (also 3 and 4) are book-matched.

Sheets 1 and 3 (also 2 and 4) are butt-matched.

In Fig. 11 sheets 5 and 6 are slide-matched—an uncommon use of stumpwood, though common in quartered striped wood, as shown in Fig. 12. Regardless of angle from which viewed, slide-matched panels show no light and dark effects, which are obtainable in book-matching.

Fig. 11

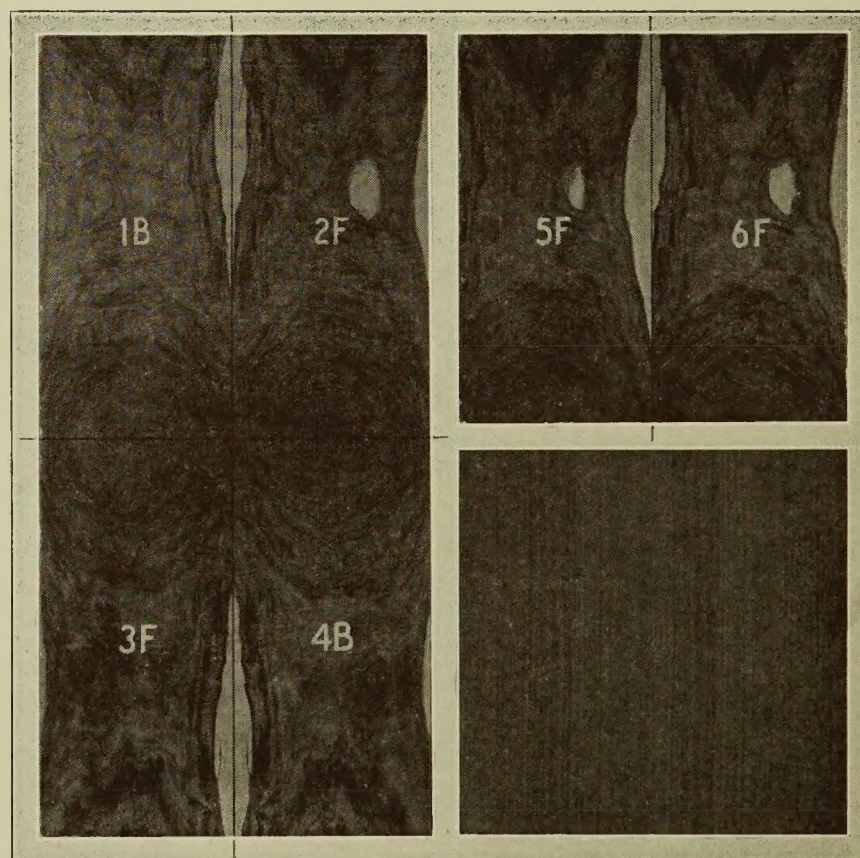


Fig. 10

Fig. 12

## Variety of Figure, Character and Types Available in Native and Foreign Face Veneers

1. American Walnut (Sliced, Half-round, Rotary and Sawn).
  - (a) Plain longwood (graded and certified). (Fig. 5).
  - (b) Semi-figured longwood (graded and certified). (Fig. 3).
  - (c) Figured longwood (certified). (Fig. 2).
    1. Fiddle-back (Fig. 4 b).
    2. Rope figure.
    3. Cross figure (Figs. 2 and 3).
    4. Mottle.
  - (d) Butts or Stumpwood (from almost plain to 80% figure). (Figs. 7, 10 and 11).
  - (e) Crotches.
    1. Feather (Fig. 8a).
    2. Moon (Fig. 8b).
  - (f) Burls (Fig. 9).
  - (g) Heart and sap character (Fig. 10).
  - (h) Quarters—plain (Fig. 4a).
  - (i) Quarters—figured (Fig. 4b).  
From fine pencil stripe to wide stripe—suitable for:
    1. Straight vertical matching (Fig. 12).
    2. Diamond matching.
    3. Reverse diamond matching. (Fig. 13-field).
    4. Herringbone matching.
    5. V (Vee).
    6.  $\Lambda$  (A).
    7. Block matching.
    8. Basket weave design.
  - (j) Rotary—plain.
  - (k) Rotary—semi-figured (Fig. 6).
  - (l) Rotary—figured.
  - (m) Swirls.
  - (n) Freaks.
  - (o) Claro (California Walnut)—a type giving the effect of Circassian walnut.
2. Ash—American and Japanese (Tamo).
  - (a) Plain.
  - (b) Crotches and swirls.
3. Aspen.
  - (a) Plain quartered.
  - (b) Mottled.
  - (c) Crotches.
4. Birch.
  - (a) Unselected (for color) Plain.
  - (b) Selected red or selected white.
  - (c) Curly.
5. Butternut (White walnut).
6. Cherry, plain and figured.
7. Ebony.
8. Elm.
  - (a) American—Plain.
  - (b) Carpathian burls.
9. Gum—selected red, figured.
10. Lacewood—figured.
11. Mahogany (all foreign spp.).
  - (a) Plain (in all spp.).
  - (b) Mottle (in certain spp.).
  - (c) Crotches (in certain spp.).
  - (d) Ribbon.
12. Maple.
  - (a) Plain—unselected for color and selected white.
  - (b) Curly (figured) quilted and blistered.
  - (c) Bird's-eye and burls.
13. Myrtle—Burls.
14. Oak, white and red (normally sawn 1/20" for panel faces, 1/8" (plus or minus) for stiles and rails).
  - (a) Plain.
  - (b) Comb grained and pin figured (bastard cut).
  - (c) Rift sawn.
  - (d) Quartered (showing prominent ray flakes).
  - (e) Imported—English brown.
15. Orientalwood.
  - (a) Quartered—plain.
  - (b) Quartered—figured.
16. Philippine woods.
17. Poplar—blistered.
18. Redwood Burls.
19. Rosewood.
  - (a) Quartered striped East Indian.
  - (b) Grainy half-round Brazilian (Fig. 13 center).
20. Satinwood.
  - (a) Plain.
  - (b) Figured.
21. Sycamore (Harewood, English gray and white).
  - (a) Plain.
  - (b) Quartered.
22. Tulipwood (Fig. 13 Border).
23. Zebrawood.

**N.B.** Although this publication concerns itself solely with the specification of veneer, it is important to note in connection with the specification of solid members made of Walnut lumber that:

- (a) In general, the specifier is not concerned with the grade of lumber used, as long as the general quality of the finished product is designated and a good concern is employed to do the job.
- (b) In Walnut, as in most woods, about the only added specification possible in the case of lumber is "quartered walnut" (Fig. 4 a and b) which can be had at an added cost.
- (c) Do **not** make the mistake of specifying "all black" or "unsteamed" walnut unless you expect to pay the premium involved, for the finest installations of cabinetwood are being obtained today by specifying simply "genuine American Walnut."

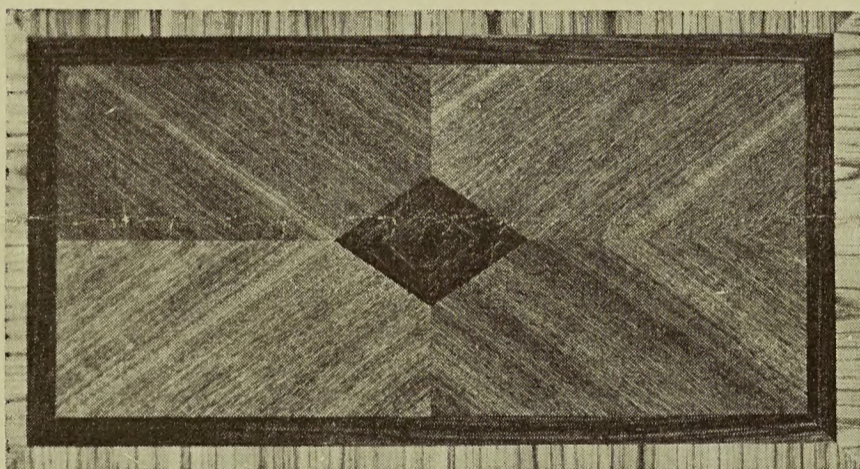


Fig. 13

Sliced quartered Walnut field. Rosewood center and inner-border. Tulipwood outer-border.

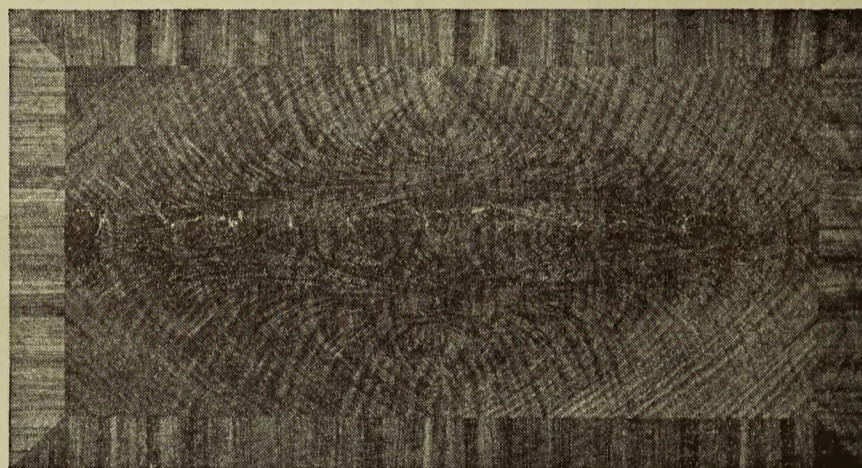


Fig. 14

Panel of beautifully matched American Crotch Walnut with border of Bubinga.

## TABLE OF CONTENTS

COMMERCIAL VENEERS .....	3	Veneers, described and classified; and, importance of knowledge of .....	3
FACE VENEERS .....	3	Woods, native and foreign, types and uses of veneers produced from .....	7
Uses and available sizes classified according to method of manufacture (sliced, rotary, sawn).....	4	American Walnut	
Uses and available sizes classified according to types of grain character and figure.....	5	Ash	Mahogany
Longwood or trunkwood		Aspen	Maple
Stumpwood or butts		Birch	Myrtle
Crotches		Butternut	Oak
Burls		Cherry	Orientalwood
Matched Veneers, characteristics of and methods employed .....	6	Ebony	Philippine woods
Panels, construction described and illustrated.....	3	Elm	Poplar
Plywood, two general types of.....	3	Gum	Redwood
		Harewood	Rosewood
		Lacewood	Satinwood
			Sycamore
			Tamo (Japanese Ash)